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6.0 Resources

Natural Resources

Vision

A healthy, rich, and diverse environment for present and future generations.

Introduction

Deterioration of the environment as a consequence of population growth, urbanization, industrialization, improper disposal of solid waste, resource exploitation, and technological developments has been a growing concern worldwide. An additional influence has been a realization of the finite nature and rising costs of energy, water, and other natural resources. On a national and state level it has given rise to policies and controls dealing with air, water, noise pollution, and other forms of degradation of the natural environment as well as the regulation of energy production and waste. Urban growth has consumed significant land areas in the past and is expected to continue in the foreseeable future. Predicted population increase is anticipated to occur in the developed and undeveloped areas of the Surprise Planning Area.

The goal of this section is to minimize the impact of urbanization on natural environment and to maintain, protect, and enhance the functions of natural resources. The challenge in Surprise is to achieve a more sensitive balance, repairing damage already done, restoring some natural amenity to the city, and bringing about productive harmony between people and the environment. It also addresses the conservation and management of energy and water in the residential, commercial and transportation sectors. An important purpose therefore is to give natural environmental amenities and values appropriate consideration in urban development along with economic and social considerations.

6.1 Environmental Planning Element

6.1 Environmental Planning Element

6.1.1 Introduction

Examining the city's natural environment is a classic early step in preparing or revising a general plan. Information about environmental hazards such as floods, subsidence, resources including mineral deposits, and natural phenomena such as critical habitats can help determine the suitability of the lands for development. Population growth and subsequent development continually require the use of finite non-renewable resources as well as those that are renewable. One role of this section is to reconcile conflicting demands on these resources.

6.1.2 Discussion

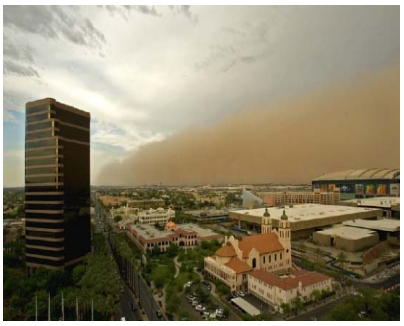
The comprehensive, integrated, and long-term nature of the Surprise General Plan 2030 makes it an ideal vehicle for implementing local sustainable goals. As Surprise grows and develops, continued protection of the environment is necessary to maintain the quality of life and the natural functionality of the environment that is currently enjoyed in Surprise. The environmental planning element is based upon the premise that the existing natural environment possesses its own inherent values and qualities that should be preserved. In the context of local planning, conservation is a positive action to assure that as build-out of the community continues to occur as envisioned by the Surprise General Plan 2030, related physiographic, hydrological, biological, and cultural resources are not lost or permanently altered to the detriment of the natural environment that we all share and enjoy. Correspondingly the role of the environmental planning element is to help identify these limitations and opportunities and define various policies and implementation measures by which these natural resources can be conserved within the Surprise Planning Area. Surprise's environmental heritage includes non-renewable resources such as extensive undisturbed natural areas, scattered historic/archaeological sites, and natural landmarks. As irreplaceable resources they warrant preservation from destruction or harmful alteration.

A. Air Quality

The goal of clean air planning is to reduce the level of pollutants in the air, to protect and improve public health, welfare, and quality of life of the residents of Surprise. In addition to being a regional issue of significance, air quality is vital to the overall health of the environment and the attractiveness of any locality. Mobile sources including on and off-road vehicles present the greatest threat to air quality in Surprise as well as the region. Because air pollutants cross jurisdictional boundaries, improving air quality requires coordination between local governments in the Surprise-Phoenix area. Three air pollutants are of continuing concerns: Carbon Monoxide (CO), particulate matter less than ten microns in diameter (PM_{10}), and ozone (O).

Regulatory Setting

Criteria Air Pollutants



Federal, state, and local laws are the basis for controlling air pollution. The federal Clean Air Act requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality standards for six common air pollutants also known as criteria air pollutants including ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), suspended particulate matter (PM), and lead (Pb). In addition, the Arizona Department of Environmental Quality (ADEQ) sites standards for ambient air quality that are more stringent than the corresponding national standards. This legislation also sets standards for sulfates, hydrogen sulfide, and vinyl chloride, pollutants for which no national standards have been set.

Toxic Air Contaminants

Unlike criteria air pollutants, ambient air quality standards have not been established for toxic air contaminants (TACs). These pollutants are typically carcinogens, mutagens, or reproductive toxins and tend to be less commonly emitted than criteria air pollutants. Regulation of toxic air contaminants is achieved through federal and state controls on individual sources. The preferred technique for reducing

toxic air emissions is source reduction and identification of sensitive receptors.

B. Noise

Noise can be defined as a sound or series of sounds that are intrusive, irritating, objectionable, and/or disruptive to daily life. Noise varies widely in its scope, source, and volume, ranging from individual occurrences such as a barking dog or intermittent disturbances of overhead aircraft, to the fairly constant noise generated by traffic on highways. It is important to measure the level of noise in the community as many uses are noise sensitive, such as residences, schools, churches, and hospitals. The known effects of noise on humans include hearing loss, communication interference, sleep interference, physiological responses, and annoyance. The purpose of this section is to set forth policies that regulate the ambient noise environment and protect residents from exposure to excessive noise.

Noise Sources and Projections

Future development within the Surprise Planning Area will result in new roads and increased traffic volumes, thus increasing the noise level in some areas. Increased traffic volumes on the highway will result in an increased noise exposure for all adjacent development. Additionally continued growth of the city–residential as well as commercial and industrial uses–will further increase traffic and noise levels on arterial roadways.

The major sources of noise in Surprise throughout the Surprise General Plan 2030 timeframe include:

SR 303 & US-60

The predominant noise source in Surprise is motor vehicle traffic on SR 303 and US 60. Increased traffic on both these corridors can be expected to increase the noise exposure for sensitive receptors along these thoroughfares.

Arterial Streets

Major arterial streets with substantial noise levels include Bell Road, Sun Valley Parkway, 163rd Avenue, and Jomax Rd. In general, auto traffic volumes will increase by 2025, along with greater noise levels.

Railroad Noise

Surprise is traversed by two railroad alignment owned by the Burlington Northern and Santa Fe (BNSF). The two lines carry freight traffic through Surprise. The infrequency of the train activity results in loud, but sporadic noise events, and therefore, does not have a significant effect on overall noise levels in Surprise.

Luke Air Force Base

Luke Air Force Base (AFB) noise contours impact the southern portion of the Surprise Planning Area as well as around Auxiliary Field #1. Luke-based aircraft account for 97 per cent of flight operations at Luke's AFB airfield. Transient and deployed aircraft conduct the remaining three per cent of operations. The F-16 fighter is the principal aircraft operating at Luke AFB. As of 2001, Luke-based aircraft conducted an average of approximately 445 daily operations at the base. A.R.S Sec. 28-8461 defines a "territory in the vicinity of military airports," within which the law requires disclosure to property owners that they are within the territory of a military airport, and the noise attenuation required for structures within the 65-decibel noise contour applies to entire area.

Source: "Air Installation Compatible Use Zone Study, Volume I", Luke AFB, AZ, November 2003.

Regulatory Setting

The federal government has no enforceable standards or regulations governing environmental noise levels. The Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978, provides a framework for the development of noise control programs through the Quiet Communities program. The state does not promulgate statewide standards for noise but ARS. 9-240 (B)(15)(b) prohibits the ringing of bells and blowing of horns related to frightening people and horses.

The World Health Organization (WHO) lists the following critical health effects for community noise as a guideline for governments to implement regulations:

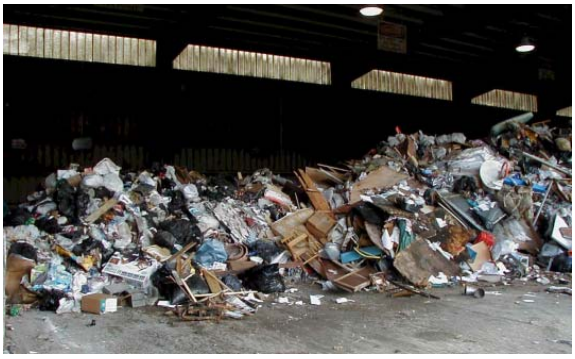
Environment	Critical health effect	Sound level dB(A)*	Time hours
Outdoor living areas	Annoyance	50 - 55	16
Indoor dwellings	Speech intelligibility	35	16
Bedrooms	Sleep disturbance	30	8
School classrooms	Disturbance of communication	35	During class
Industrial, commercial and traffic areas	Hearing impairment	70	24
Music through earphones	Hearing impairment	85	1
Ceremonies and entertainment	Hearing impairment	100	4

Table 6.1A - *Source: "Guidelines for Community News", World Health Organization, March 1999.*

C. Solid Waste

Surprise's growth will increase the quantities of both non-hazardous and hazardous solid wastes generated in the area. An effective and comprehensive long-range waste management plan for the region will ensure that storage, collection, disposal, and recycling of wastes occur in an environmentally and economically acceptable manner. Solid waste transfer and disposal facilities for Surprise are owned and operated by Waste Management while residential solid waste pickup and disposal are the responsibilities of the city. Currently, commercial and industrial waste is handled by private haulers, Parks and Sons. Hazardous waste is handled by a private contractor who is certified to handle hazardous material. At this time Waste Management owns and operates the Northwest Regional landfill and contracts the operation of waste transfer stations that provide service

to Surprise residents. On an average Surprise generates about 365,000 tons of garbage every year. With a capacity of 92,000,000 tons, northwest regional landfill has sufficient volume to serve Surprise until 2043.



Arizona Department of Environmental Quality regulates solid waste and disposal including:

- Assuring the proper handling, storage, treatment and disposal of wastes.
- Promoting pollution prevention and recycling.
- Responding to environmental emergencies.
- Reviewing and approving construction plans for landfills and special waste facilities.
- Investigating complaints and violations for Arizona's solid and hazardous waste laws.

Recycling

Surprise annually contributes 7,000 tons of recyclable waste which is only about two per cent of the total solid waste generated. Currently Surprise only offers the curbside recycling program. Since increasing recycling is a major goal for the city of Surprise is looking at the possibility of drop-off sites as well.

6.1.3 Goals and Policies

Goal 1

Air quality impacts of development are decreased by coordination of the land use and transportation decisions. 

Policies:

1. Ensure that the housing-to-jobs ratio is attained within each of the Special Planning Areas (SPA) through implementation of the economic development element of the general plan.

2. Encourage mixed use land use development near transit lines and provide retail and other types of service oriented uses within walking distance to minimize automobile dependent development.

3. Promote the design and implementation of efficient transportation corridors and circulation systems in all developments.

Goal 2

Air quality is protected and improved. 

Policies:

1. Identify possible causes of air pollution, investigate techniques for mitigation, and implement mitigation techniques as appropriate.

2. Ensure that all roadways are paved and maintained to reduce particulates in the air.

3. Protect air quality through the development and enforcement of dust control measures on agricultural and development-related uses.

4. Support programs that reduce pollen pollutants.

5. Encourage the use of trees which provide biogenic benefits to air quality and are suitable to the local environment. Consider planting of trees for every significant tree removed at a project site.

6. Replacement planting may occur on the project site on a publicly owned area, with long term maintenance assured.

7. Reduce emissions from residential and commercial uses.

8. The contractor of future individual projects should reduce combustion emissions during construction and demolition phases.

Goal 3

Plans and communications between cities, agencies, and citizens regarding air quality issues are coordinated and improved. 

Policies:

1. Work with Maricopa Association of Governments, Maricopa County, and the state of Arizona to ensure that regional air quality attainment goals are met.

2. Actively support the development of a regional public transportation system.

3. Work with local businesses to promote transit and rideshare usage.

4. Work with jurisdictions throughout the region to bring non-attainment areas into compliance with federal, state and local requirements.

5. Work toward the addition of monitoring stations in areas of suspected high pollution.

Goal 4

Impacts of noise that decrease the quality of life within the planning area are minimized. 

Policies:

1. Discourage location of new noise sensitive uses, primarily homes, in areas with projected noise levels greater than 65 db. Where such uses are permitted, require incorporation of mitigation measures to ensure that interior noise levels do not exceed 45 db.

2. Encourage the Luke AFB to minimize flights after 10:00 p.m. or before 7:00 a.m.

3. Continue to require controls of noise or mitigation measures for any noise-emitting construction equipment or activity.

4. Support public awareness programs about the noise contours and their importance for compatible land use planning in the vicinity of the Luke AFB area.

5. Continue to require noise buffering along major roadways (e.g., SR 303, US-60, and Sun Valley Parkway).

6. Continue efforts to incorporate noise considerations into land use planning decisions, and guide the location and design of transportation facilities to minimize the effects of noise on adjacent land uses.

7. Formulate land use compatibility standards to determine acceptable uses and installation requirements in noise-impacted areas in addition to Luke AFB.

8. Consider the use of alternative paving materials that reduce traffic noise, as feasible, depending on roadway conditions and cost efficiency.

9. Encourage the use of alternative transportation modes to minimize traffic noise in the city.

10. Minimize noise spillovers from commercial and industrial operations into adjacent residential neighborhoods, while maximizing the Land Use Element's objectives to encourage mixed-use development.

11. Locate outdoor commercial areas and gathering places, loading areas, parking lots, driveways, trash enclosures, mechanical equipment, and other noisier components away from residential zones and other sensitive uses.

12. Consider developing procedures to ensure that acoustical analyses are included as a part of the project review and building permit process.

13. Development projects shall be evaluated for potential noise impacts and conflicts as part of the Development Review process.

Goal 5

Illegal dumping is minimized. 

Policies

1. Continue efforts to educate the public concerning their responsibility for correct solid waste disposal and publicize the locations of legal landfill sites.

2. Locate and document significant illegal dumping sites; clean up and close the areas through owner notification, posting of “no dumping” signs, and berming or fencing to deny access.

3. Enforce controls against poorly secured waste or construction materials during transportation.

4. Investigate the use of residential solid waste transfer stations between areas of population and landfills.

Goal 6

Pollution Prevention Programs are enhanced. 

Policies

1. Promote coordinated pollution prevention programs through continuing cooperation and communication with other government entities.

2. Strive to achieve a natural nighttime environment and an uncompromised public view of the night sky by reducing light pollution